California Cotton for the Planter

SOUTHERN PACIFIC

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CALIFORNIA FOR THE COTTON PLANTER

By EDWARD B. WILSON

WHILE this little book is intended to carry a message to everybody in general, in particular it is meant for those who know cotton, for its object is to induce people to come and make their homes in California and raise cotton.

For that reason a Southerner was delegated to write this message. One who was "born and raised" on a Southern cotton plantation, where he learned the peculiarities of the cotton plant as well as the joys and the sorrows of the cotton-planter; and who since has learned California from end to end, and therefore knows the golden opportunity which California now is offering the cotton-grower.

Cotton

—a World Commodity

NEARLY all Southerners have a good knowledge of cotton as a world commodity, but outside of the South it is unusual to find anybody who knows anything about cotton at all, and for the benefit of the latter a brief explanation of what American cotton means to the world must be given here, else they will fail to grasp the full significance of this message.

Nearly every human being in the world consumes some cotton practically every day of his life. To civilized man not even food is more necessary, for civilized man must wear clothes as well as keep life in his body, and cotton is the textile of which the greater part of his clothing is made, to say nothing of the thousand-and-one other articles of cotton manufacture in daily use all over the world. Cotton therefore is a world commodity; in either its raw or its manufactured form it is in demand by all the human race; therefore the whole world is the market for cotton. This is emphasized to distinguish cotton from many products which can find only a local market, such as our corn which many people do not eat; and also from those products which, while they find a market throughout the world are more in the nature of luxuries than necessities.

And cotton being a commodity which all of the world consumes as a matter of necessity, it naturally follows that the world must and will have cotton for so long as cotton can be had.

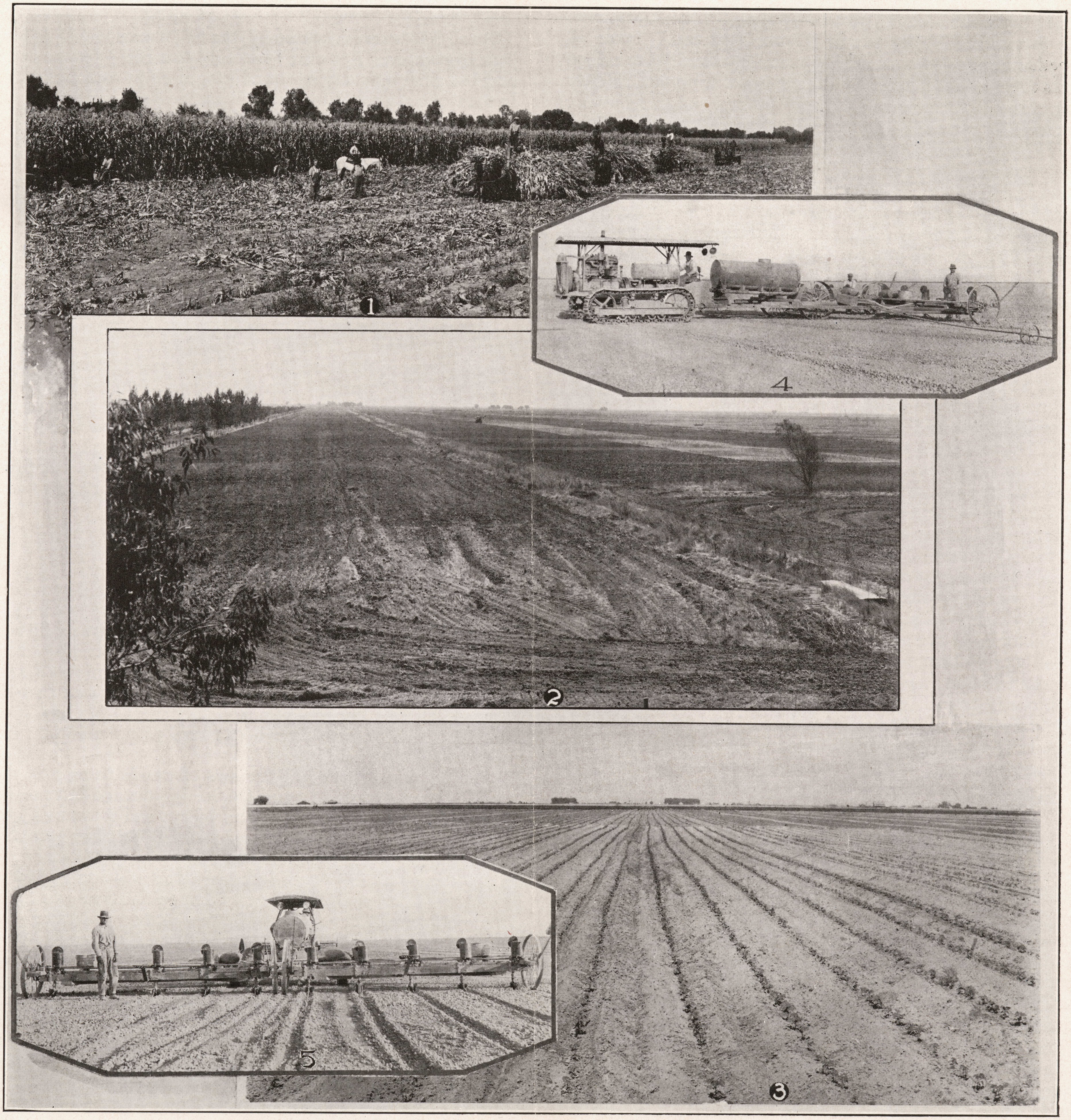
Of the various types of cotton produced by the world the American short-staple is the dominantly important kind, for the reason that the world consumes nearly three times as much of it as of all the other kinds together. And American cotton, it has been demonstrated conclusively, can not be raised with profit anywhere in the world other than the south temperate zone of North America, which includes northern Mexico and California; the plant will grow wherever it is warm enough, but nowhere else will it bring a profit for the grower. For more than sixty years Great Britain has been searching the globe for some other country where it could be grown successfully, but her every experiment has met with failure. She began it back in the days of the Civil War, when the blockade of the Confederate ports suspended the exportation of American cotton to Europe, up to which time Great Britain had obtained from this country eighty-five per cent of all the cotton she manufactured. Concerning that time we find in the Encyclopedia Britannica the following article by the pen of Isaac Watts, Chairman of the Cotton Supply Association, of Manchester, England:

> "Thousands (in England) were for a time deprived of employment and the means of subsistence. In this period of destitution the cotton growing resources of every part of the globe were tested to the utmost; and in the exhibition (at London) of 1862 the representatives of every country from which supplies might be expected met to concert measures for obtaining all that was wanted without the aid of America. A powerful stimulus was thus given to the growth of cotton in all directions; and a degree of activity and enterprise never witnessed before was seen in India, Egypt, Turkey, Greece, Italy, Africa, the West Indies, Queensland, New South Wales, Peru, Brazil, and in short wherever cotton could be produced; and there seemed no room to doubt that in a short time there would be abundant supplies independently of America. But ten years afterwards, in the exhibition of 1872, which was specially devoted to cotton, a few only of the *thirty-five* countries which had sent their samples in 1862 again appeared, and these for the most part only to bear witness to disappointment and failure. America had re-entered the field of competition, and was rapidly gaining ground so as to be able to bid defiance to the world. * * * The superiority of the produce of the United States was proved beyond all dispute, and American cotton was again king."

And the situation today remains the same that it was in 1872, for American cotton still is king. But the Southern States, owing to the destructiveness of the boll weevil throughout that section, no longer by themselves can supply the world's demand for cotton; ever since 1921 the world has been consuming American cotton at the rate of one and one-third million bales a year in excess of its production, eating up the carry over from preceding years, so that we now have come to where there is next to no American cotton left on hand anywhere in the world. We are verging on a cotton famine from which no relief can be found except by turning to California and Arizona, for so far as experience goes it is only in such a climate as California's that the boll weevil can be controlled. Certain areas in Arizona are equally adapted with the California valleys to cotton culture.

CALIFORNIA'S COTTON CLIMATE

California, climatically speaking, is the most varied of all the States of the Union, but it is only in the three great interior valleys that the climate is suited to cotton, for the summer is too cool in the mountains and along the ocean for the plant to thrive. In these valleys, however, lies the world's largest area of rich level irrigated land. The smallest of them is the Imperial, lying along the Mexican border at the extreme southern end of the State, with which for the purposes of this article will be included the small neighboring Coachella and Palo Verde Valleys. The



1. Where good corn grows, good cotton will grow
2. Preparing to plant cotton
3. A field of May cotton
4. Multiple cotton planter—side view
5. Same—rear view

largest is the San Joaquin, in the central part of the State. And the Sacramento Valley lies in the northern end. Taken all together these valleys contain approximately twenty-five million acres of land, though much of it is not suited to cotton. Nearly two million acres are in orchard and vineyard and therefore not available for cotton; a large part along the valley's edges is too hilly for irrigation; another large part for the present must be classed as waste land; and the northern end of the San Joaquin Valley perhaps is too cool for cotton to do its best; but even so there remain from six to ten million acres where cotton may be planted with full assurance of a bountiful crop, for the climate is ideal for cotton.

North and south, so far as climate is concerned, are words which mean very little in California. Except at the Golden Gate the Coast Range mountains protect the great valleys from the cool ocean winds, and on their other sides the high Sierra Nevada (Snowy Mountains) effectually shelter them from wintry blasts, so that cotton and oranges grow and produce at the northern end of the Sacramento Valley in the latitude of New York just as they do at the southern end of the State, eight hundred miles to the south. The only difference that it makes to cotton lies in the rainfall, which is greater in the north than in the south. But this affects only the picking, for even in the northern end of the Sacramento Valley it does not rain in the summer; it begins very little earlier in the fall than in the other valleys, but therefore picking should be finished earlier if the crop is not to run the risk of weather-stain.

In none of the valleys should the seed be planted until danger of chilly nights has passed, for cold dew will hurt young cotton in California just as much as in the South. But from that time on all worry about the weather may be thrown to the winds, for the following six months are usually an unbroken succession of sunshiny days and warm nights, except that once in a while it may be varied a little by the cool air in the high mountains settling down into the valleys and somewhat lowering the temperature for a day or so, though never enough to injure cotton. Now and then the wind blows a stiff breeze, but never has California experienced either a tornado or a cyclone. In the late fall the rains begin, sometimes as early as October in the Sacramento Valley, coming at first in gentle showers which barely settle the dust, but increasing in both frequency and quantity as the season advances until in January or February they reach their maximum, from which they decline gradually and come to an end in the spring, usually in April. It is much cooler during the rainy months than in the summer, though it never gets really cold; now and then a thin sheet of ice forms on shallow pools of water and it frosts quite often, but rarely ever enough to nip even the orange trees.

As shown by Government reports the total average annual rainfall in the Imperial Valley is a little over three inches; in the San Joaquin Valley it ranges from six inches in the southern end up to sixteen inches at the northern end; and in the Sacramento Valley it is from sixteen to twenty inches.

NO BOLL WEEVIL IN CALIFORNIA

As all Southerners understand, the boll weevil would do but little damage even if it were here—and it is not— for the little pest has great difficulty in reproducing itself in such a climate. In the warm dry counties of west Texas its damage, according to Government reports, seldom exceeds five per cent of the crop, whereas in moist east Texas it goes much higher. But not a weevil ever has been found in California. And it seems safe to say that it never will get here, for California on the landward side is shut off from all the rest of the world by hundreds of miles of dry warm territory across which no insect can make its own way; and to prevent its being brought here, the importation of cotton seed into the State must be done subject to the supervision of State officials, for California's lawmakers are fully awake to the importance of keeping it out.

Nor are the other terrors of the Southern cotton planter to be feared in California. Unknown is the dreaded wet June, keeping the farmer in the house day after day, groaning in anguish of spirit as he watches the rain come down and the grass and weeds hop up, for June always is dry. Not for a moment during "lay-by" time does he watch the clouds, fearful that it is going to rain either too much or too little and cause his fields to shed half their crop, for there are no clouds to watch. Once in a great while in the fall he may be caught by an early frost and lose a part of his top crop, but that is all.

WATER FOR IRRIGATION

To account for the enormous amount of water required to irrigate the fields and orchards in a country where it does not rain in the summer, another peculiarity of California's climate must be explained. In the Imperial Valley it all is taken from the Colorado River, which drains a vast area in the Rocky Mountain region whence it brings down far more than is needed. In the San Joaquin and Sacramento Valleys it is obtained from local mountain-born rivers, or else pumped from wells.

All the winter long great masses of clouds rising from the Pacific Ocean go drifting across the San Joaquin and Sacramento Valleys, sometimes raining in the valleys and sometimes not, but always driving themselves against the high Sierra to the east and there precipitating their moisture in some of the world's heaviest snowfalls. Government records are responsible for the statement that snow fell in these mountains in the winter of 1878-79 to a total depth of 783 inches, or more than sixty-five feet, while down in the Sacramento Valley just sixty miles away the total rainfall that winter was only fourteen inches. However, that was the heaviest snowfall ever recorded; the average total fall at the Government observatory is only a little over thirty-six feet. The weight of the snow packs it down as it falls, forcing it into a compact mass almost as hard as ice, and there it stays until the coming of warm weather in the spring. Then, as the farmers begin to need the water the snow begins to melt, at first on the lower slopes of the mountains but going higher and higher up their sides as the sun grows hotter, until at the

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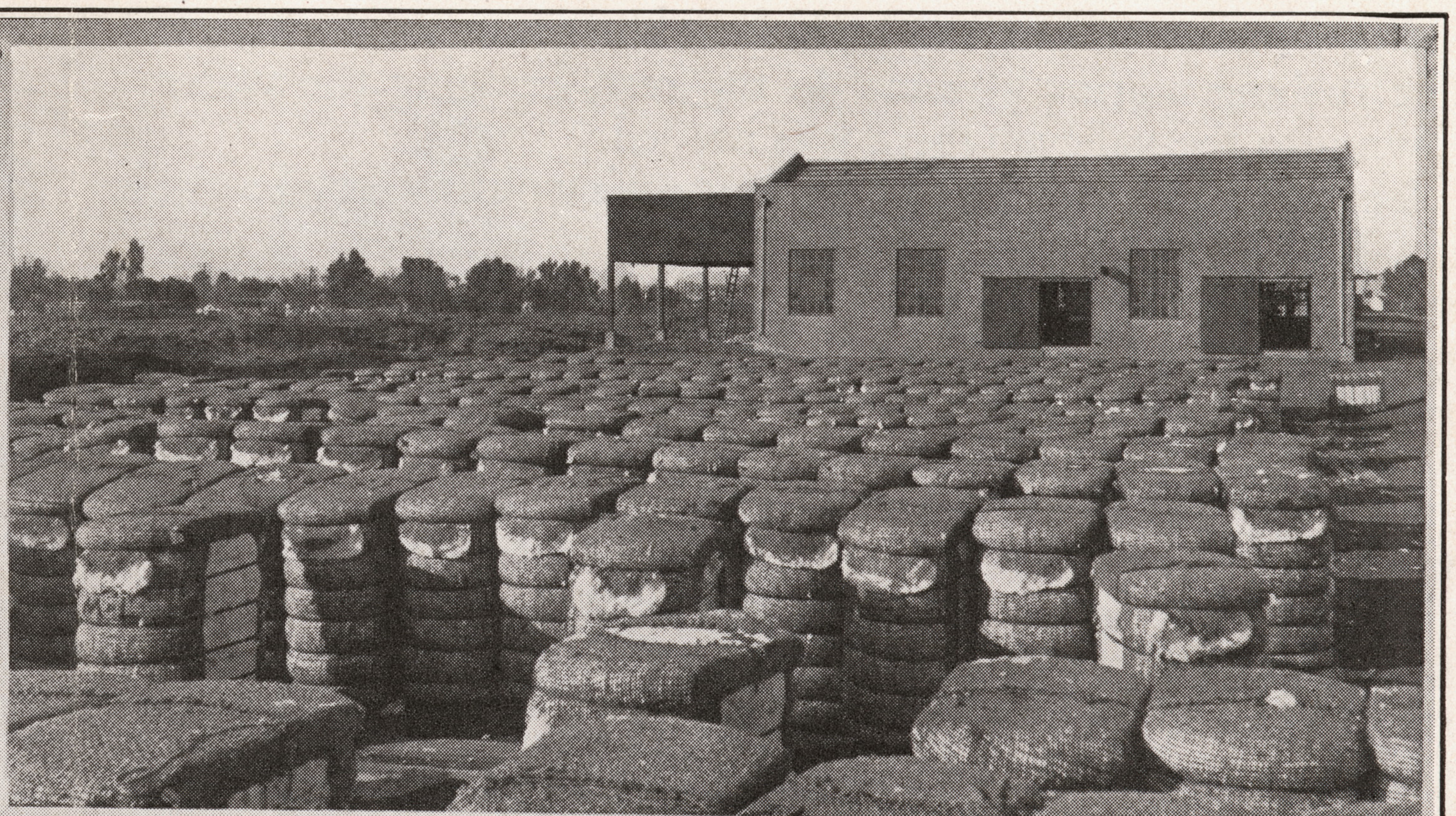
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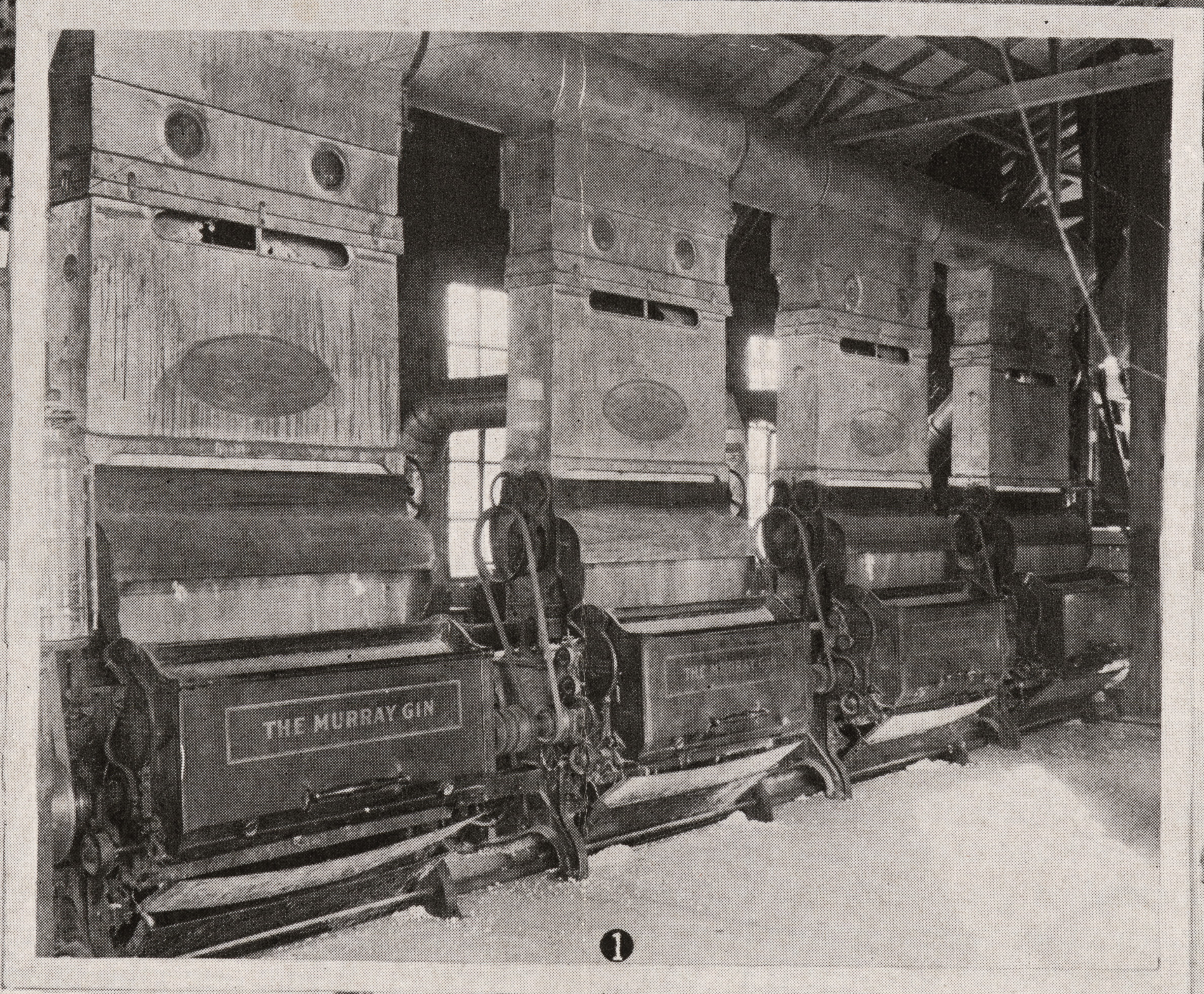

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1. A modern gin
2. July cotton and corn
3. The gin yard
4. A patch of June cotton
5. The day's pick

end of summer all but the highest of the peaks are laid bare. The rushing roaring streams do the rest, bringing the water down into the valleys where it is needed.

Irrigation places it within the farmer's power to make the growing and fruiting season just exactly whatever he wants it to be; as he wishes he can make it either wet, medium, or dry, by the amount of water which he turns on his lands and the frequency with which he applies it; or he can have it wet for one field, medium for another, and dry for still another. And that means that he has it in his power to get from every acre of his farm the largest yield which it is capable of producing. In a climate where a perfect season for gathering the crops is assured, irrigation therefore means absolute certainty of getting from one's labor and investment the largest possible profit; in which it stands out in sharp contrast with the long gamble which the farmer must take where he depends on the rains to water his crops. But for that farming by irrigation would not be so profitable, for it requires a vast amount of labor to prepare land for irrigation and to bring the water to it, to which is chargeable the greater part of the value of irrigated lands.

The first step in preparing wild land, of course, is to clear off whatever brush is growing on it. Then it must be leveled, for no matter how flat it may lie it is sure to have some inequalities of the surface which must be smoothed down so that water will flow evenly over it all, else some spots would get too much water and others too little. This works no injury to the land in California, for there is no subsoil here as this term is understood in other states; the soil deep down usually is much the same that it is on the surface. The amount of labor required for leveling depends on the amount of earth to be moved and the character of it; light sandy loam costs less than the heavier kinds. And the same applies to the digging of the small lateral or supply ditches, by which the water is conducted from the main ditches to the various places where it is to be turned on the fields. But the largest item of cost is the construction of the irrigation system, consisting of many miles of huge canal and a vast network of main ditches, and sometimes a great reservoir, for the water must be taken from the stream or reservoir supplying it high enough above the land to be irrigated to cause it to flow by gravity to all parts of the tract. Or else large pumps are utilized for lifting the water into the canal. The largest of California's irrigation systems, in the Imperial Valley, waters a total of 531,000 acres. In the San Joaquin and Sacramento Valleys many of the farms are irrigated from wells owned by the farmers individually. It costs less per acre in some sections to sink the wells and equip them with pumps and engines than to share in the cost of the big gravity systems, but in other sections more. In both these valleys there are districts where flowing artesian wells may be had by going deep enough, and everywhere else they are semi-artesian in the sense that the water rises in them to varying short distances from the surface. Most of the pumping is done with electric motors, for the valleys everywhere are spider-webbed by electric power lines, but gasoline engines are employed wherever electricity is not available.

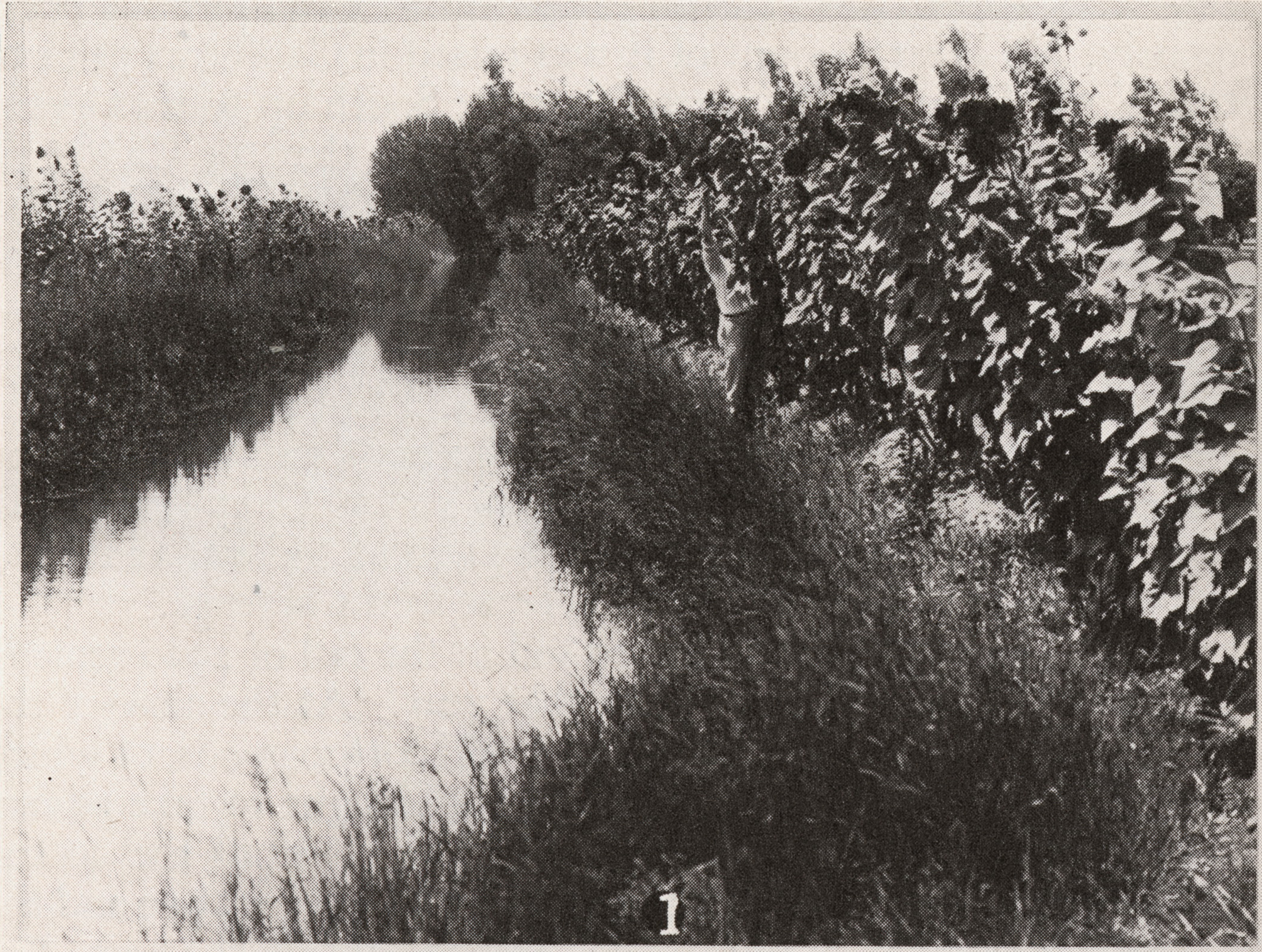
The cost of the water per acre for irrigating cotton averages about $3.50 a year, taking the State as a whole; in some parts it costs less than this amount and in others more. Where it is obtained from one's own wells it costs whatever is paid for the power employed in pumping, which is more in some sections than to take it from one of the gravity systems and in others less, depending on the distance which the water must be lifted.

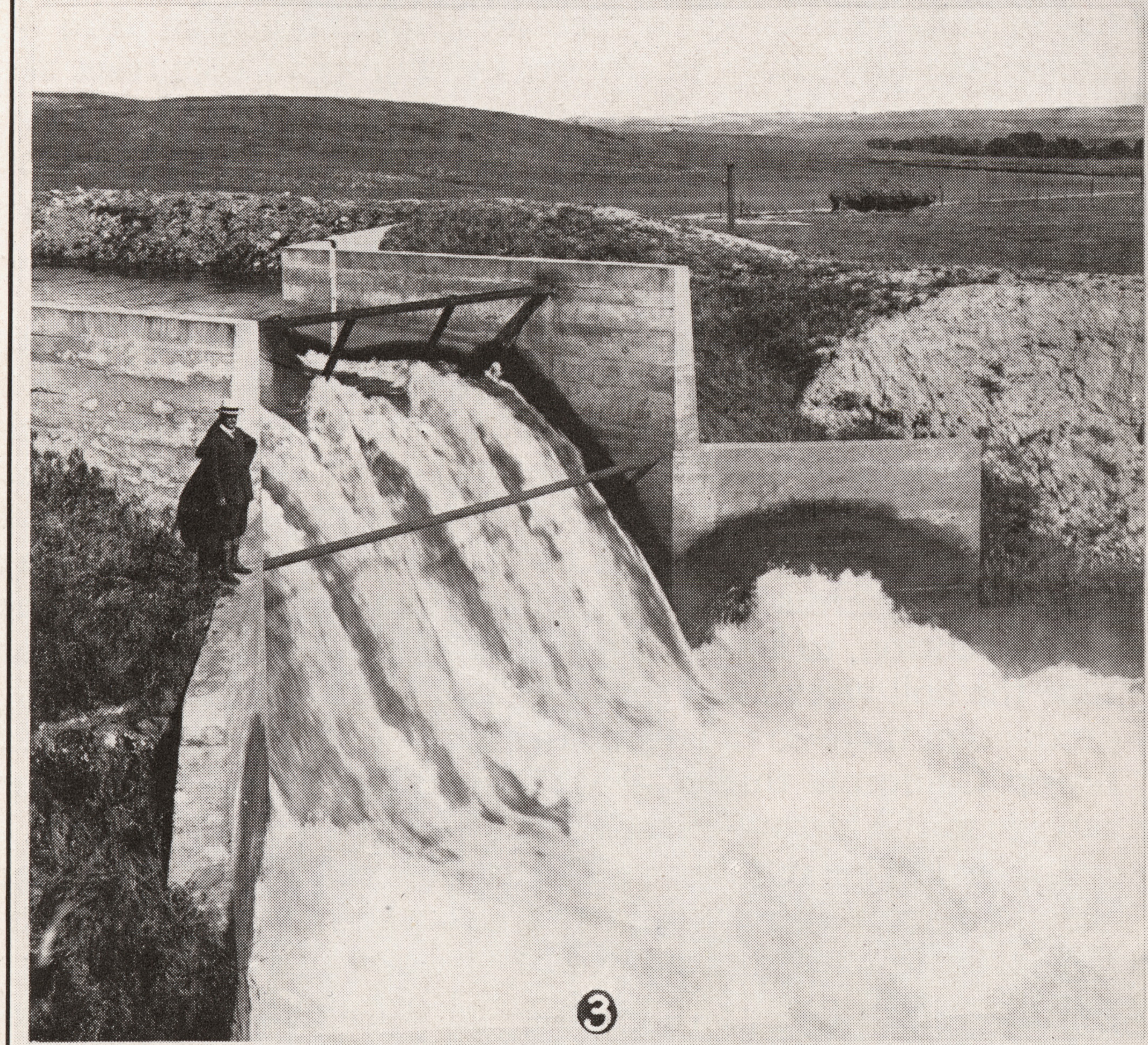
THE COTTON LANDS

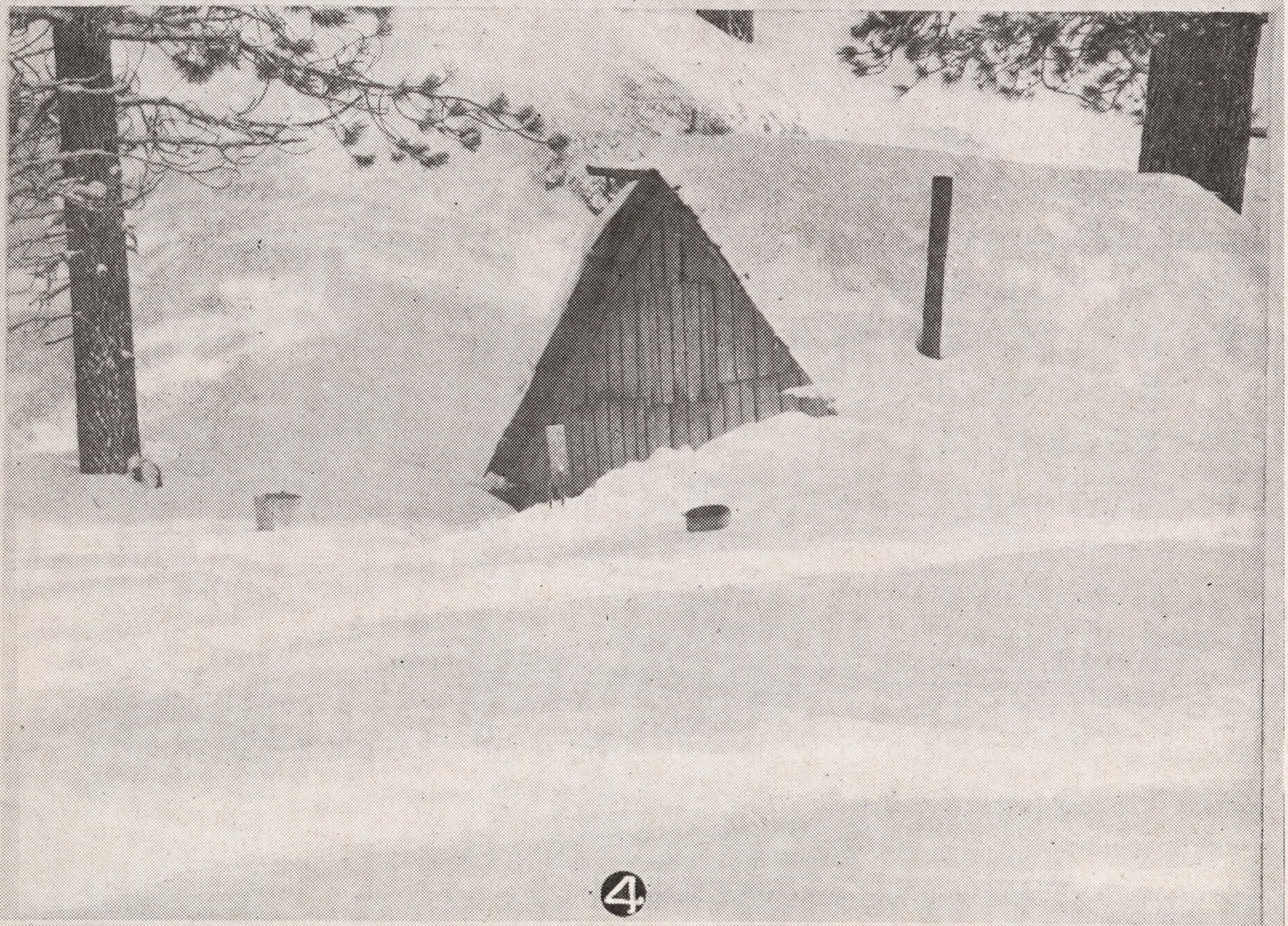
The great valleys at the beginning of the world were inland seas, from which the water was slowly expelled during the ages by silt brought down by the streams from up in the mountains, and their soils therefore are chiefly of a sandy nature, more or less mixed with clay. Though in certain localities there are large areas where the prevailing type is what is known in some parts of the South as "buckshot," and in California as "doby," or properly *adobe*, a heavy black waxy clay containing little or no sand, usually rich and productive but hard to work. The sandy soils range in texture all the way from that of fine sandy loam up to that of clay loam, all of which are easy to keep in a good state of pulverization. In color they run from a dirty white through all the shades of gray and sand and straw and brown and chocolate up to the black of the *adobe;* some of the clayey kinds are brick-red even, where stained by iron. Very little of the loose black forest loam of the Southern and Eastern States is found anywhere but in the mountains, for the reason that the great valleys never have been in woods, other than a fringe of trees along the streams.

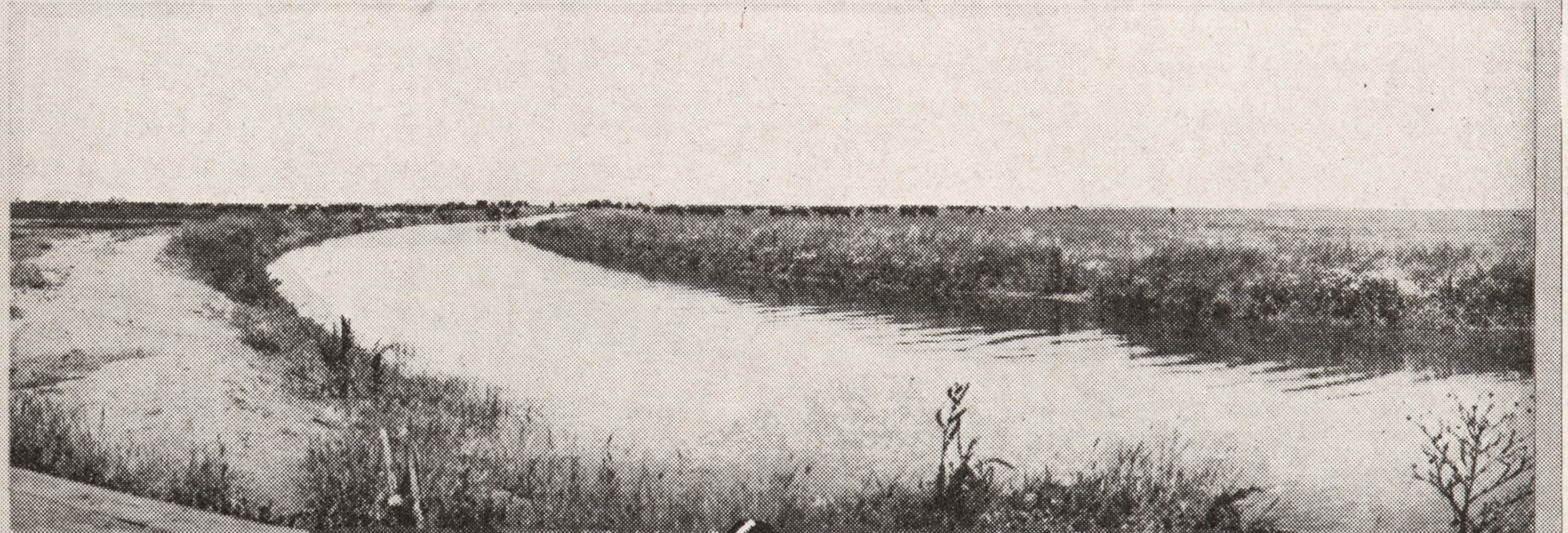
A common mistake of the newcomer is to judge the land entirely by its color as in the South and East, where the depth of the top layer of black loam usually is the determining feature, which causes him to shun the lighter colors and to seek the dark. In California the color of the soil is no test of its richness, as is evidenced by the fact that all the various shades yield abundantly in some localities and scantily in others. Nor may its content of sand be accepted as decisive, for some of the richest land in the State looks like a sand-bar, and also some of the poorest. While one who knows the different soils readily can pick out the good from the poor, to lay down any rule for the guidance of one strange to them would be misleading as often as helpful, for what would apply correctly in one section would not in another. The only rule that can be laid down for all the valleys is, land found producing good crops of any kind may be relied on to bring good cotton; and it is wise to pay the price necessary to get the best, for it takes just as much work to get a crop from an acre of poor land as from an acre of the best.

In the Imperial Valley the land holdings average small, for the reason that a large part of the land there has been acquired from the Government during recent years, under the laws governing the reclamation of desert lands which establish 320 acres as the most to which any person will be granted a patent; and since the granting of the patents not many consolidations have been made. Therefore, while one may buy as small an acreage there as he may want, a large holding can be had only by









1. Where big sunflowers grow, big cotton will grow
2. Artesian irrigation well
3. Where the canal begins
4. Some of the world's heaviest snowfalls
5. The San Joaquin River
6. Main canal coming down into valley

consolidating a number of smaller ones. But in the San Joaquin and Sacramento Valleys there are holdings of from one acre in extent up to thousands of acres, for while most of the vast tracts in which the lands of these valleys originally were acquired have been subdivided, and still are being subdivided, a few of the old-time holdings still remain intact. Consequently both these valleys are spotted; the sections where the subdividing process has reduced the holdings to small tracts are thickly settled, whereas one may travel for miles over some of the large tracts, still in grain or pasture, without coming to a house.

The prices asked for land in California vary as widely as elsewhere, and for the same reasons. Rich land is worth more than poor; land close to a good town is worth more than that lying far out; and the value of the improvements is taken into consideration. At the present time first-class cotton land without buildings, in readiness for irrigation and having sufficient water, can be bought at from $150 to $300 an acre, the exact figure depending on the roads, distance from a town, and other things of that kind. This means land every inch of which is available for planting, and every acre of which, with correct irrigation, will bring a 500 pound bale of cotton or more. Inferior lands can be had for less. And also the larger tracts that are for sale, as a wholesale matter, and for the reason that large tracts usually contain more or less inferior land, though not always. But it must be remembered that land prices are not fixed in California any more than they are elsewhere; the large profit the farmers are getting from cotton is sure to create a steadily increasing demand for cotton land. If a place improved with buildings be bought, a large part of the purchase price must be paid in cash, usually one-half of it. But if the buyer prefers to put up his own buildings, such as are suited to raising cotton, and buys from one of the large tracts now being subdivided, very easy terms may be had, from twenty to thirty per cent of the price to be paid in cash and the balance in annual payments covering varying terms of years.

THE ACREAGE IN COTTON

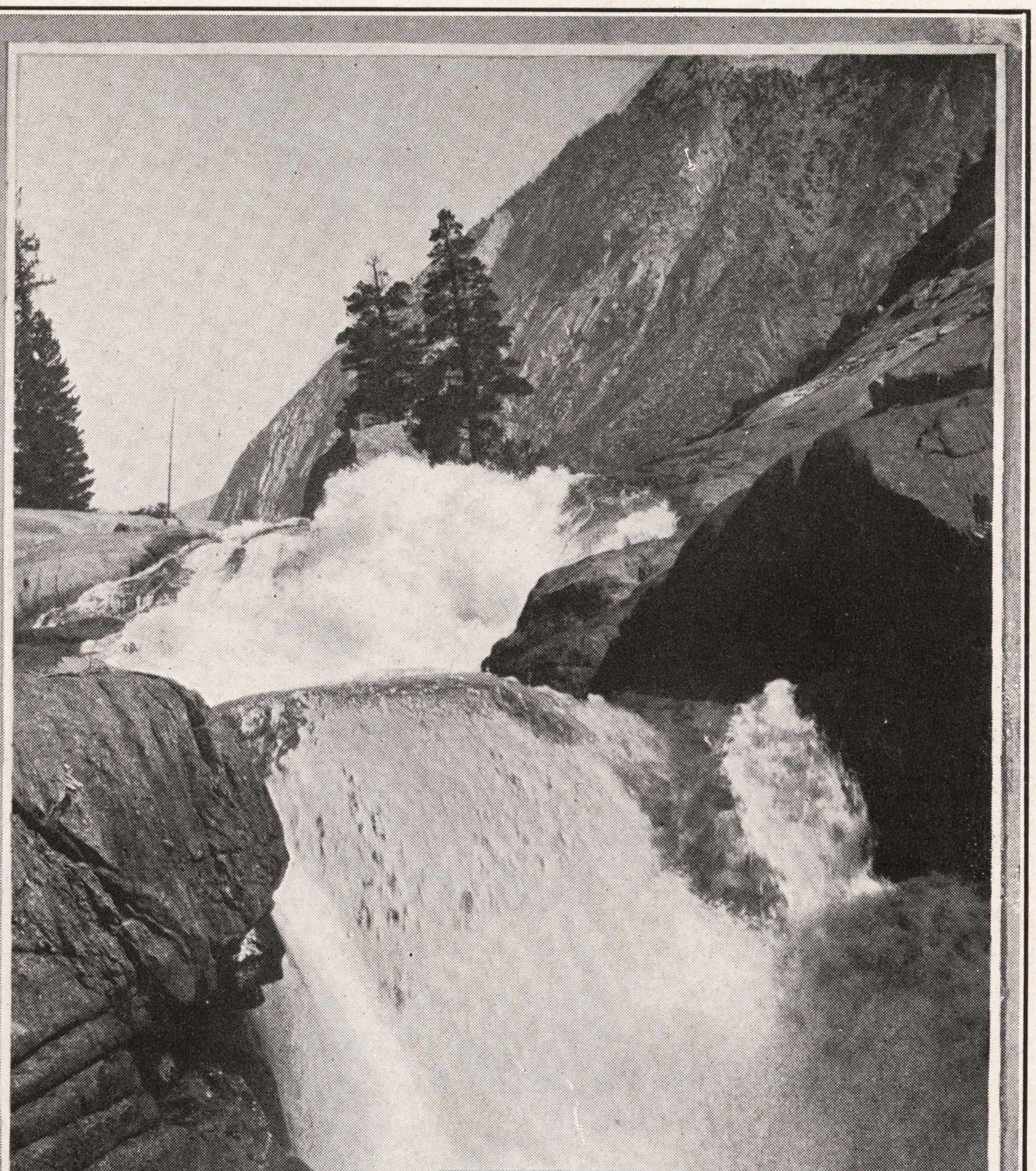
The newcomer in California must not expect to find this a land of cotton such as the South is, for up to the present time it is far from that. The California farmer is the farthest of all farmers from being confined to any one or two crops; he can begin at A and go down to Z, or at least to W to be exact, from almonds and alfalfa to walnuts and wheat, over all the agricultural products of the world and select for his own planting almost everything in the list; and for that reason and those given below for every acre now in cotton there are at least one-hundred acres in orchard and vineyard, alfalfa, grain, and dozens of other things.

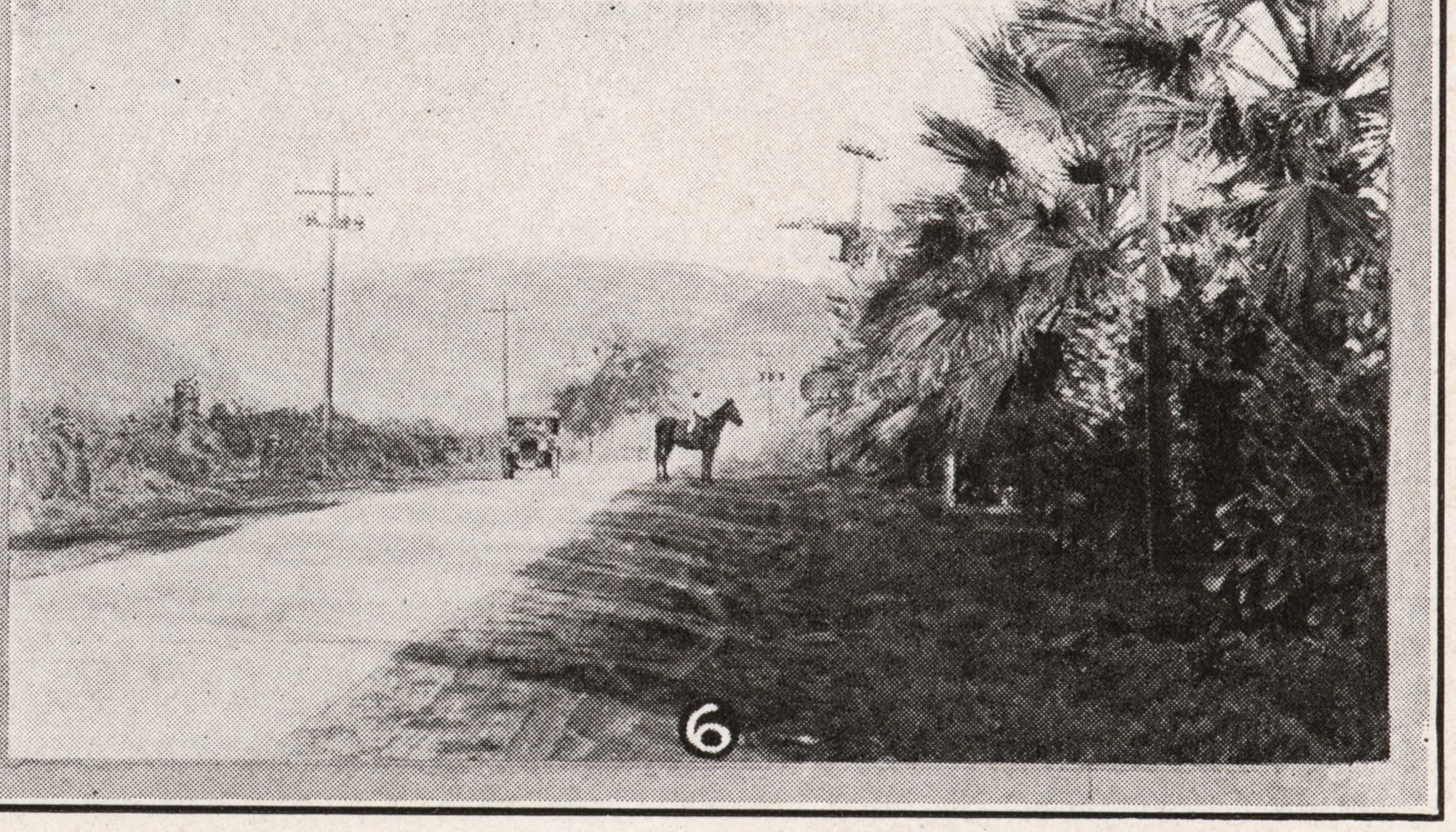
Almost from the first settlement of the State widely scattered Southerners in the San Joaquin and Sacramento Valleys have planted little patches of cotton just to see if it would grow, thus demonstrating that it would, but it was not until 1905 that the first was raised to sell, in the Imperial Valley. And though it thus was proved that cotton raised by irrigation yields enormously. No great amount of it was raised in California prior to the World War, for the reason that the South up to that event was able to produce cotton at prices so low that the California farmer was not attracted to it. The first effect of the big war on cotton was to suspend its exportation to Europe almost as completely as during the Civil War, with the natural result that the price dropped almost to nothing, and consequently very little was raised in California in 1915. But the demand for cotton in the manufacture of war munitions presently started the price to bounding upward, upon which California began planting it again, and throughout the rest of the war and up to 1920 every year saw a material increase in the acreage.

Every man who had cotton to sell in the fall of 1920 remembers what happened to the price that year. At the close of the war Europe was short of both cotton and cotton goods, of which condition speculators all over the world sought to take advantage by buying and holding for a higher price all the cotton there was, which operated to send the price during 1919 and the first part of 1920 even higher than it went during the war. But the speculators overlooked that the United States in 1919 no longer was advancing money to the European countries, for which reason Europe had no money with which to buy cotton. Consequently for the third time in the history of America the movement of American cotton to Europe again came to a standstill, and with the same disastrous result to the price as in 1914. Therefore California planted very little cotton in 1921.

But during 1921 the wartime prices of California's other products sharply declined, while European buying of cotton revived thus starting the price of cotton upward, for which reasons 1922 saw California planting cotton once more. And the price that fall was so good as to place cotton on an equal footing with other crops, which stimulated the planting in 1923 of a largely increased acreage. Then came a swift rise in the price of cotton, to figures higher than those of 1919, for by that time the boll weevil had spread in the South and was reducing production there so rapidly as to alarm the world, and for that reason California this year has planted to cotton the largest acreage in the history of the State.

In considering the above sketch it must be borne in mind that very few of California's farmers are Southerners. In the beginning of cotton here not many of them knew whether it grew in the ground like potatoes or up in a tree like apples, and they had nobody to explain to them what it is that cotton means to the world, and so with rare exceptions they even now know next to nothing of cotton as a commodity. They know what the current price is, but they still are hazy as to what it is that establishes it. The crash of the price in 1914, its rapid rise during the war, the second crash in 1920, and its swift climb in 1923 up to its present high level, is incomprehensible to them, for they do not know what it was that caused these violent fluctuations. Consequently they incline to look on cotton as the most uncertain crop as to price they can raise, and on the cotton-planter as a hare-brained gambler who may win a fortune in a year, but is more likely to go into bankruptcy from another





1. The alfalfa fields swarm with fat pigs
2. In the home orchard. Fig tree 84 feet across
3. Alive with trout and other fishes
4. Streams of melted snow
5. Grapes for the table and raisins
6. Thousands of miles of the best highways in the world

crash of the price. Every acre they have in cotton, therefore, represents much fear and trembling on their part, and that is why the total acreage at this time is not vastly larger than it is. But they are gaining courage with every day, so it needs only a good price for this year's crop to induce the planting of an enormous acreage next year.

RAISING COTTON BY IRRIGATION

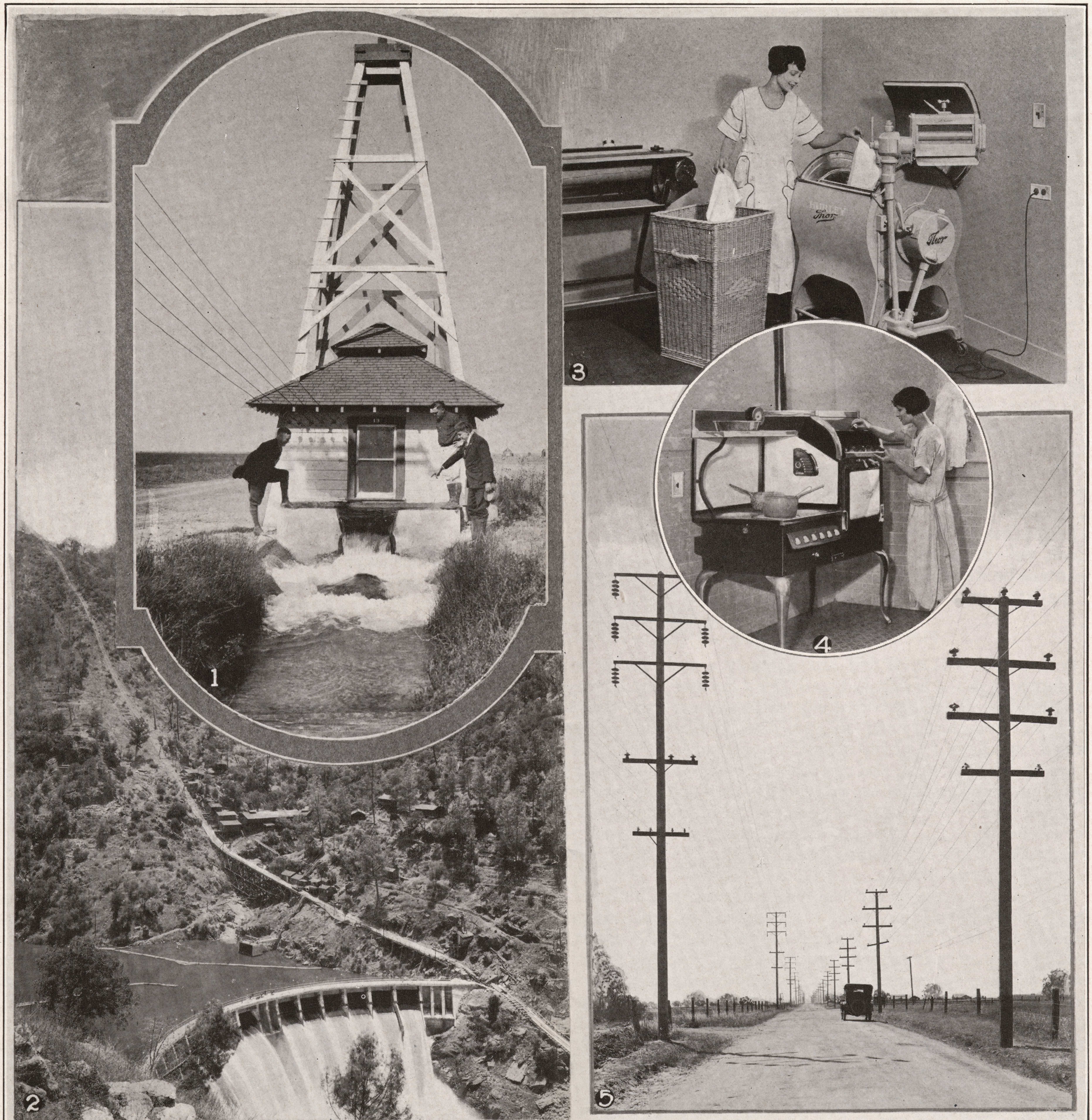
There is nothing mysterious about farming by irrigation. Instead of the rains moistening his lands the farmer puts the water into the ground himself. Fields in alfalfa and other broadcast crops are irrigated by flooding them broadcast, but with cultivated crops in rows the water is applied by running it along furrows between the rows. Very nearly every piece of land slopes in one direction or another, and by running his rows with the slope the farmer has only to turn the water into the furrows at their upper ends to cause it to flow by gravity clear across the field. For that reason the supply ditches always are constructed along the highest lines of the fields they serve. That part of it is easy to learn. But it requires study and close observation of the crops to learn how best to apply the water, and what amounts of moisture at their different stages of growth cause them to bring their heaviest yield. California farmers generally have a good knowledge of how best to irrigate alfalfa and orchards and their other familiar crops, but so far many of them have not learned enough of the peculiarities of the cotton plant to irrigate it correctly, and therefore California's present average yield of half a bale to the acre is not a fair test of the State's productiveness. But the Southerner learns it quickly, for he begins with a good knowledge of the plant's requirements in the way of moisture.

If the land has not been soaked deep by the winter rains, then the first step in the spring is to flood it broadcast, thus putting into it sufficient water to carry the crop to lay-by time. And when it becomes dry enough for plowing it next should be broken broadcast and harrowed until the surface is well pulverized, which may be done with a tractor and gang plows. How deep it should be broken depends somewhat on the texture of the soil; the cotton plant does not require deep breaking, but there must be a sufficient depth of loose dirt on the surface to keep the moisture from drying out of the ground, therefore it should be broken from four to six inches deep, and the heavier soils even deeper. The more thoroughly the ground is cultivated before planting, the less will it require after the crop is up.

In the Imperial Valley where there is a grass that comes up with the cotton the next step is to list the ground into ridges, which is done with a double turning plow that throws the dirt to both sides, called a "lister," and the seed is planted in the ridges as in the South. But in the San Joaquin and Sacramento Valleys there is no grass to be hoed out of the young cotton, and therefore in these valleys the land is planted level just as the harrowing has left it. One ingenious farmer has made for himself a multiple planter with which he plants ten rows at a trip, one man to drive the tractor drawing it and another to walk behind and see that nothing goes wrong, but for the rest the planting is done as in the South. To get the best results the crop should be planted in April or May to accord with the season. Another thing which operates to reduce California's average yield per acre is the poor stands found all over the State. Most of the farmers have not learned to put enough seed in the ground in the first place; some plant as little as fifteen pounds to the acre; often they plant so deep in order to get into moist dirt that the sprouting seed can not push their way to the top; and others to avoid that, plant so shallow that the seed in places get no moisture and do not even sprout. To follow the old-time Southern rule of planting a bushel (about thirty-five pounds) to the acre undoubtedly would bring a great improvement in this, for the more seed one puts in the ground the greater will be the number of young plants to help one another push their way to the surface. Or if a field dries so fast after planting that seed planted at a proper depth do not get sufficient moisture to bring them up, then that field should be irrigated again right after the planting, for nothing takes money out of the farmer's pocket so fast as a poor stand.

The growing-season in California stands out in pleasing contrast with what it usually is in the South, where unseasonable rains so often keep the hoes flying from its beginning to the end to keep down the grass, and oftentimes the plows as well. In the Imperial Valley because of the grass already mentioned the crop must be hoed twice, but in the San Joaquin and Sacramento Valleys, if the land already has been in cotton, the only object in hoeing at all is to thin the crop to a stand; if it has not been in cotton or some other crop calling for clean cultivation then the hoes sometimes have to go back to get a scattering of cockleburrs and other such weeds which come up after the first hoeing. Nowhere is the scraper used preparatory to hoeing; in the Imperial Valley they "bar-off" the rows, but elsewhere all that is needed is to run a cultivator between them. In all the valleys the only object in cultivating the crop is to keep the surface of the ground stirred, which serves to retain the moisture in it, and therefore no plowing heavier than that of a cultivator is required. This should begin at about the time the cotton is putting on its third leaf, and should be done once every ten days or two weeks until lay-by time, from the middle to the latter part of July. Every trip of the cultivator should move the dirt toward the cotton, to build up ridges and leave middles in which to run the irrigation water, or else at the last a good furrow must be plowed for this purpose. The ingenious farmer already referred to as planting ten rows at a time is experimenting with cultivating in the same way, using a high-axled tractor that straddles a row of cotton and draws a number of cultivators, but so far the rest use horses and mules with one cultivator at a time. If the tractor experiment proves successful, and there seems no reason why it should not do so, then horses and mules quickly will vanish from the cotton farms, for Californians are prompt to adopt labor-saving implements.

The key to successful cotton-raising in California lies in the irrigation of the plant. Any man having a piece of the best



1. Irrigation well, electrically driven pump
2. Where electricity is generated
3. Washing by electricity
4. Cooking with electricity
5. Electric power lines spiderweb the valleys

land, who will study both the land and the plant until he learns just when is best to apply the water, and just how moist to make the ground at the different stages of the plant's growth, may count on getting from one to two bales to the acre every year. Such a crop lays every stalk down on the ground under the weight of the bolls, making a mess for picking, but nevertheless it pays. Therefore every cotton-planter should study it out for himself. The character of the soil varies so greatly in the different sections that any rule laid down here for the guidance of the newcomer might prove harmful to him; while it would work just right on one kind of land, on another kind it might not do so well. However, it can be said with safety that cotton is not a water plant. Every Southerner knows that a summer of gully-washing rains brings a big stalk and mighty little cotton. On the other hand every Southern farmer has raised a fairly good crop of cotton in a year so dry that it burnt up his corn. And every Southerner has experienced a dry July followed by a wet August, and some other year a wet July followed by a dry August, both of which caused his cotton to shed a good part of the squares and young bolls. These things are plain evidence that cotton does not require wet ground, and that it should not be subjected to violent changes of ground-moisture, from which it is to be reasoned out that light but frequent irrigations from lay-by time till October will bring the best results. The best course for the newcomer to follow is to irrigate for the first year just as his Californian neighbors do, which will bring him results as good as theirs, but in the meantime be studying it out for himself. Picking usually begins in the latter part of September.

FINANCES AND LABOR

Both cotton and seed find just as ready a cash market in California as in the South, but with the difference that buyers for the mills come to the towns where the gins are located and buy direct from the farmers. In some localities the farmers have formed associations, which attend to the handling of their crops, thereby reducing the cost of marketing to a minimum. There are modern gins in all the localities where cotton is raised, and in the State there are several oil mills and two compresses, as well as one cotton mill. Some of the cotton is exported to Japan, but the most of it goes to the mills in the Eastern States and Europe.

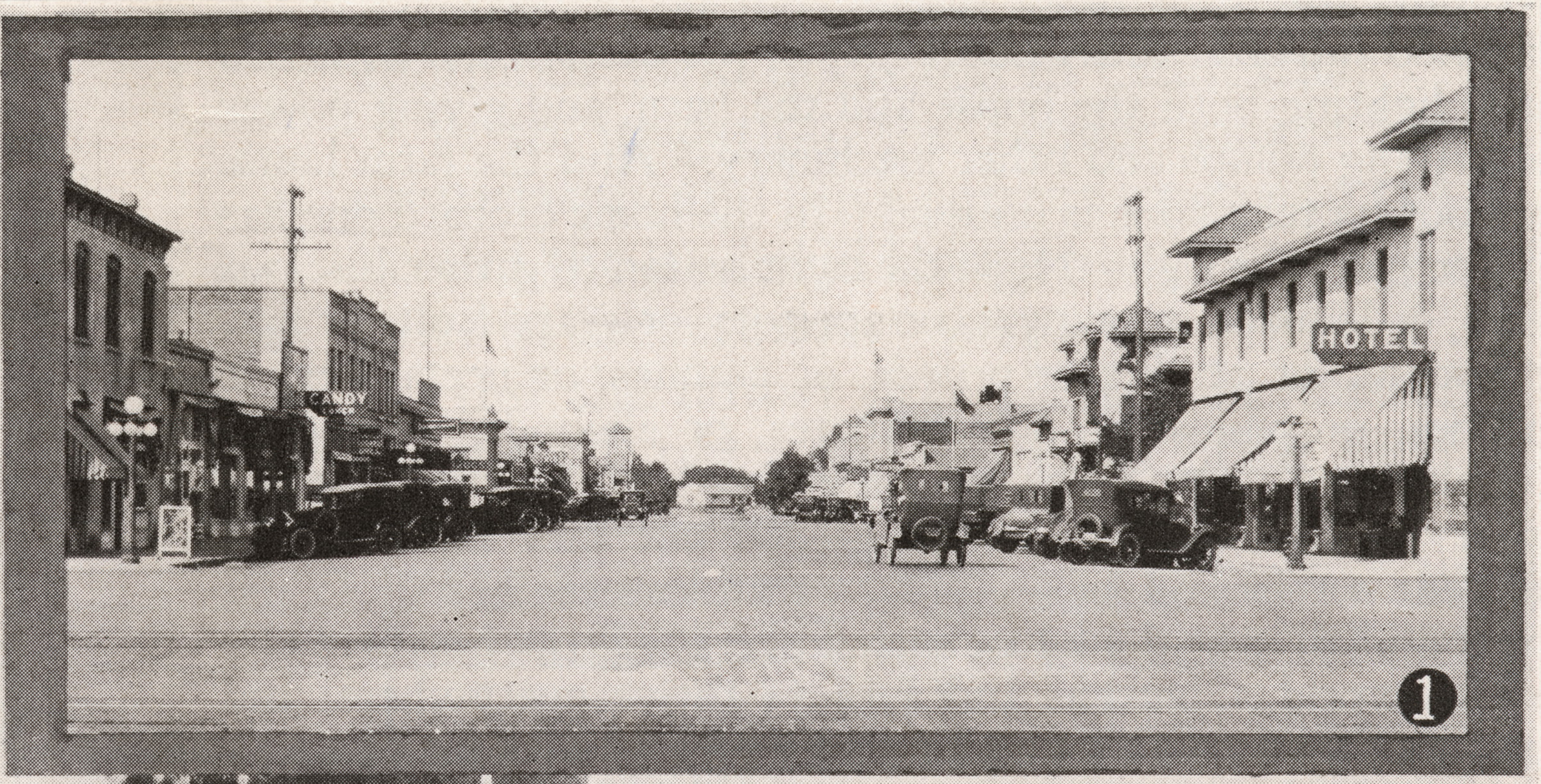
The credit system of the South is unknown in California. The farmer who obtains credit here from either merchant or banker gets it for the reason that he is deemed worthy of credit, and not because he is raising a crop of cotton. As the fear of cotton passes and it comes to be realized that spot cotton means spot cash the Southern system no doubt will find its way here, but for the present those who are planning to come to California must bear in mind that they must keep enough cash on hand to carry them until the end of the season and their crop is sold.

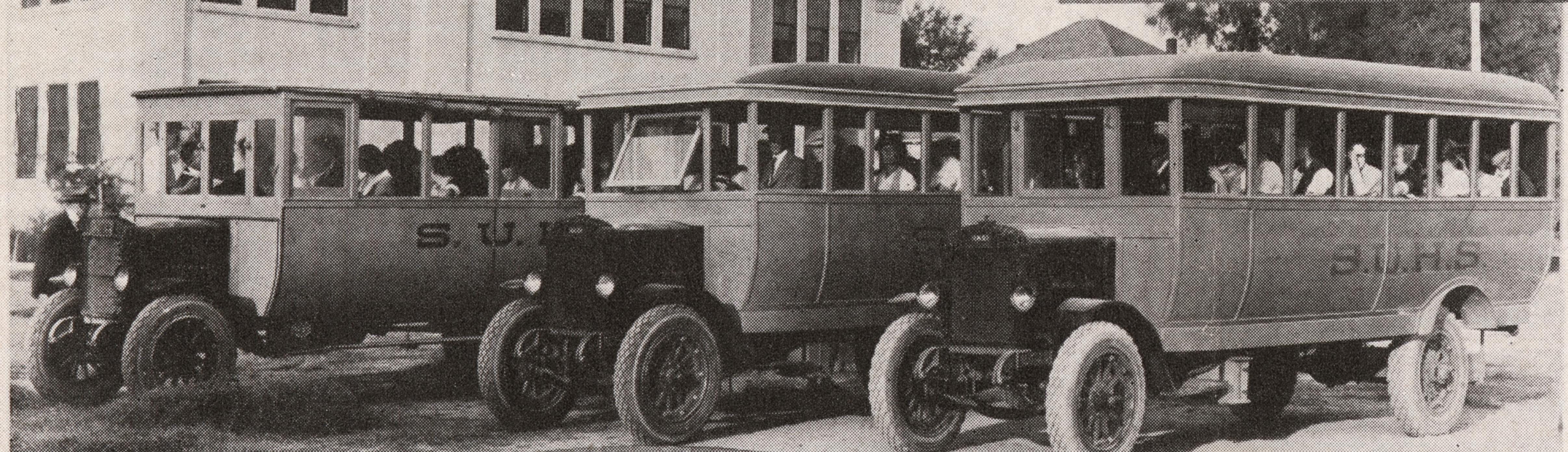
Labor conditions in California are different from those of the South. There is some share-cropping, the tenant furnishing everything for himself and paying to the land-owner a part of the crop. No doubt this method will become more popular as the acreage in cotton increases, for California has her share of tenant farmers. Other tenants pay a cash rental for their land. But for the present a large part of the cotton is produced by the smaller land-owners, by their own labor and that which they hire, though there are a few of the large land-owners, not afraid of cotton, who are going into it on a large scale with hired labor. The rule is to pay hired labor by the day or by the acre for cultivating the crop, and by the hundred pounds for picking. Last year with all the labor hired it cost about twelve cents a pound to produce and market cotton. In the Imperial Valley a good many Negroes are seen, but very few elsewhere; and in all the valleys there is a large and rapidly increasing number of Mexican laborers. Also there is a sprinkling of Japanese and Hindoos, who can be hired by the day or month or by the acre, but who are forbidden by a State law to rent land either for cash or a share of the crop. Then California has a large class of migratory laborers, unattached men who work in the country from spring to fall, but flock to the cities for the winter. And in all the towns and cities there are large numbers of people, men, women and children, who go to the country for a few months every summer and fall to help gather the crops. With all of these together, California never has had a shortage of farm labor.

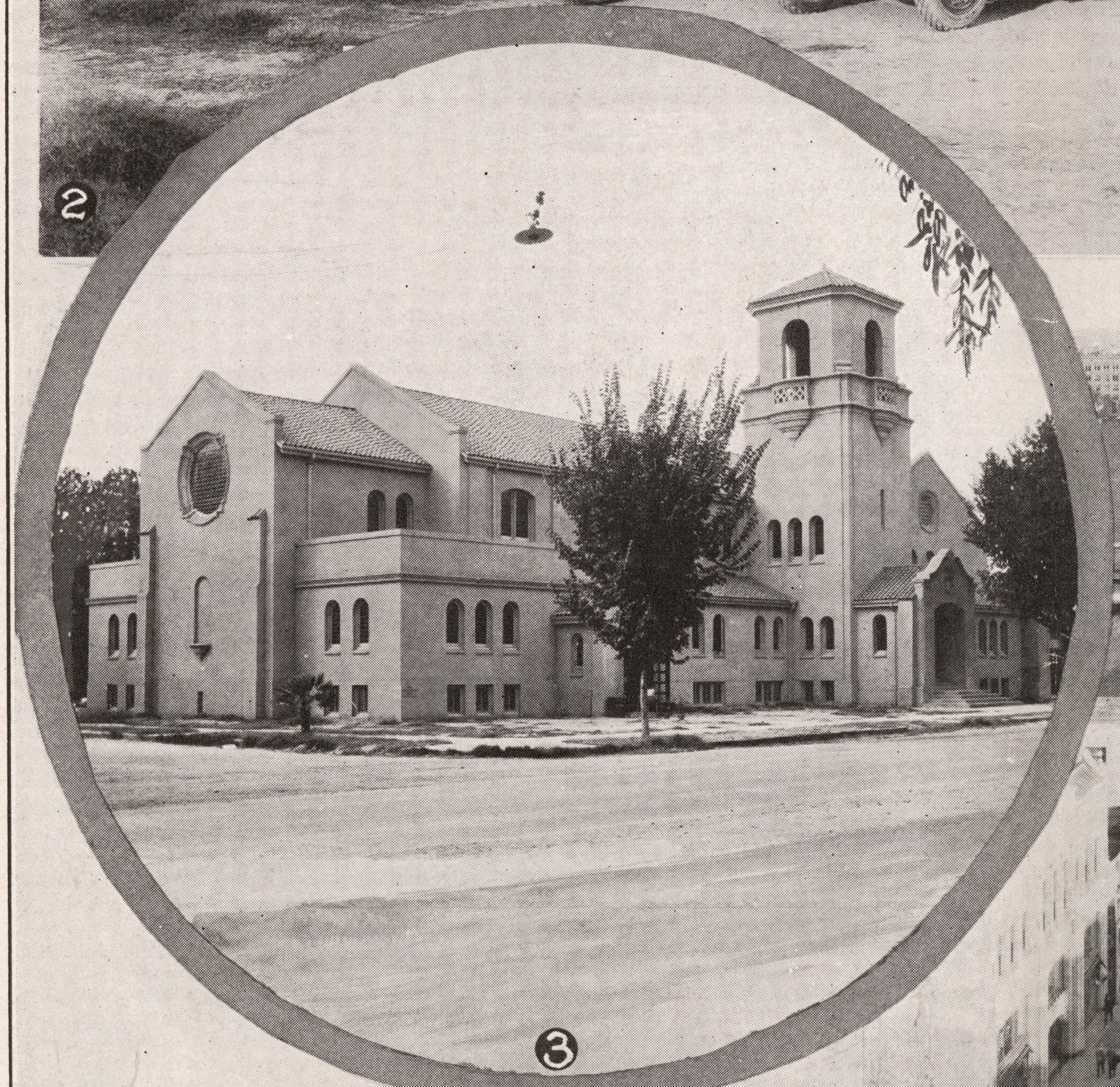
CALIFORNIA'S DELIGHTS

The old-time saying of the miners back in the days of the great gold rush to California, that they had to kill a man to start a graveyard, perhaps was true at that time, for the '49ers all were young men in the prime of life, but nowadays people die in California as elsewhere, though rarely of certain of the maladies with which mankind is afflicted in some other parts of the world. The most noted of these is malaria. Thanks to the dry summers and the absence of woods and swamps, the malaria mosquito is found in the great valleys in such small numbers that chills and fevers are all but unknown. Only those who bring malaria to California in their systems need think of it. And for the rest, a climate which permits one to live out of doors most of the year accounts for the high average of health which Californians enjoy.

With good health one can find some joy in life even in the most forbidding parts of the world. Then how much happier should be the lives of those who live in California, where there is everything one can think of to make country life inviting? The great valleys throughout are dotted with modern up-to-date towns and cities, having churches and schools and stores, and all the other things which go to make up an attractive wide-awake social and business center. Railroads gridiron the State from end to end, giving first-class transportation service to all its parts. There are thousands of miles of the best highways in the world, roads as well paved and as smooth as any city street, criss-crossing the State in every direction, not only in the valleys but also in the mountains and along the ocean shore. Electric power lines are everywhere, furnishing the farmer's wife electricity for cooking and washing and ironing and







1. One of the valley towns
2. A rural union high school
3. A country-town church
4. One of the valley cities

sweeping and many other things, thus taking the place of the slip-shod and often filthy house-help of the Eastern and Southern farm, lighting both the house and the barn, and giving power for driving pumps and other machinery. And the farm house without its telephone is unusual. In the home orchard one has only to go to the right tree in the right season to gather luscious pears, or loquats, or oranges, or apricots, or grape-fruit, or figs, or lemons, or apples, or prunes, or peaches, or nectarines, or cherries, or plums, or pomegranates, or almonds, or English walnuts; one's own vines furnish grapes both for the table and for drying into raisins; in the garden one may have all the different berries and melons and vegetables ever heard of; and about and all over the house such flowers as grow nowhere else in the world. Chickens and turkeys thrive everywhere; and bees and cows; and the alfalfa fields swarm with fat pigs.

To the lover of the beauties of nature, no other part of the world offers so many and such varied attractions. Almost at one's door looking to the east tower range after range of some of the tallest mountains in the world, their peaks gleaming white with eternal snow, their sides dark with forests of majestic pines and firs and gigantic redwoods; from their loftier parts affording entrancing views such as not even Switzerland can surpass. And to the west almost equally near, the world's biggest ocean, the broad Pacific, beats ceaselessly against the shore. At lay-by time one has only to take the train or gas the trusty "flivver" and drive with the wife and kiddies an hour or so to find either in the mountains or on the ocean shore a delightfully cool place for a vacation. In the mountains among the dense woods are lakes and rushing streams of melted snow alive with trout and other fishes, plenty of deer in the thickets, and in the grass and brush coveys of crested quail. And along the ocean shore are other woods and deer and quail as well as the big fish of the ocean, and towns and cities where can be had all the pleasures which seaside resorts everywhere afford. Small cause for wonder that nearly all Californians have formed the vacation habit. All summer long the roads stream with automobiles of all ages and kinds and descriptions, piled high with tents and bedding and other camp equipment, filled with happy men and women and children and the faithful dog, bound either to or from a camping trip; while the railroads lengthen their trains and increase their number to accommodate the travel by rail. And in the winter, should one long for a taste of snow and ice and biting cold, he has only to go high enough up among the mountains to find arctic weather, with skating and all the other winter sports awaiting him.

California has no room for the man who will not work and who has no capital to work for him, but for the rest there is a hearty welcome awaiting, and room aplenty. Your politics will make no difference, for California's vote sometimes goes Republican and sometimes Democratic. Nor will your religion, for no matter what your creed may be you will find many of the same faith already here. Then come all who can, for whatever may be your station in life you will find California both brighter and happier.

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C. L. McFaul, Assistant Passenger Traffic Manager	San Francisco, Cal.
F. C. Lathrop, General Passenger Agent	San Francisco, Cal.
John M. Scott, Assistant Passenger Traffic Manager	Portland, Ore.
J. A. Ormandy, General Passenger Agent	Portland, Ore.
F. S. McGinnis, Assistant Passenger Traffic Manager	Los Angeles, Cal.
F. E. Watson, General Passenger Agent	Los Angeles, Cal.
E. J. Fenchurch, General Passenger Agent	Tucson, Ariz.
Eugene Fox, Assistant Traffic Manager	El Paso, Tex.
J. M. Fulton, Assistant General Passenger Agent	Reno, Nev.

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S. G. Reed, Assistant Traffic Manager	Houston, Tex.
R. H. Carmichael, Assistant to Traffic Manager	Houston, Tex.
W. C. McCormick, General Passenger Agent	Houston, Tex.
H. J. Fitzgerald, Assistant General Passenger Agent	Dallas, Tex.
Edward McClannahan, Assistant General Passenger Agent	El Paso, Tex.
C. S. Fay, Traffic Manager, Louisiana Lines	New Orleans, La.
J. T. Monroe, General Passenger Agent	New Orleans, La.

SOUTHERN PACIFIC OF MEXICO

H. Lawton, Traffic Manager	Guaymas, Mex.

SOUTHERN PACIFIC ATLANTIC STEAMSHIP LINES

Wm. Simmons, General Freight and Passenger Agent	New York, N. Y.

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Boston, Mass., 294 Washington Street	E. S. Leavitt, General Agent
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Indianapolis, Ind., Merchants Bank Bldg	Lyon Liston, General Agent
Kansas City, Mo., Railway Exchange Bldg	F. W. Sedgwick, General Agent
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New York, N. Y., 165 Broadway:	A. J. Poston, General Agent, Passenger Department S. C. Chiles, General Agent, Freight Department
Oklahoma City, Okla., 909 Colcord Bldg	J. A. Eads, General Agent
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Pittsburgh, Pa., Chamber of Commerce Bldg	G. G. Herring, General Agent
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Farming by irrigation accounts for the enormous yield of cotton in California.

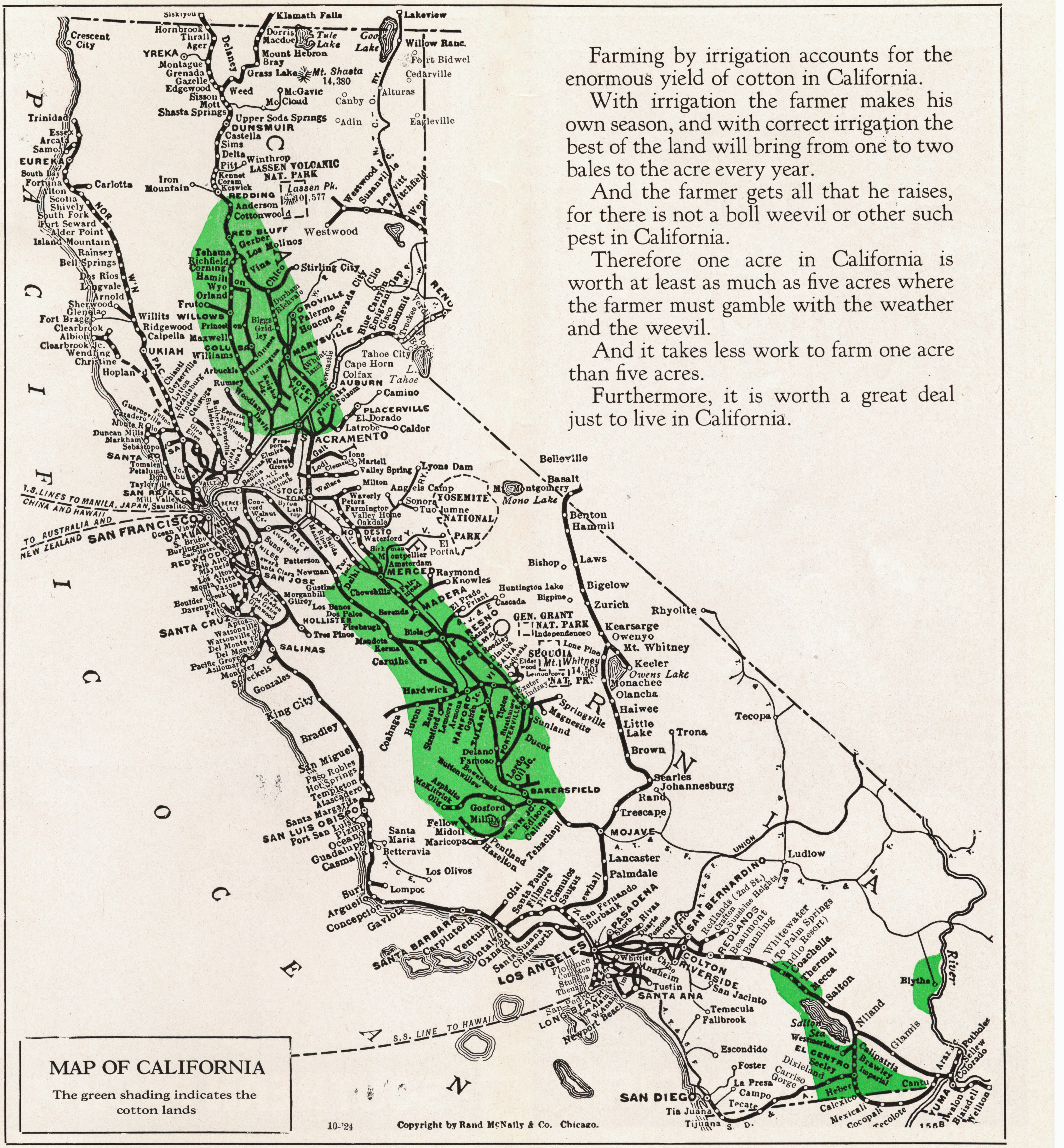
With irrigation the farmer makes his own season, and with correct irrigation the best of the land will bring from one to two bales to the acre every year.

And the farmer gets all that he raises, for there is not a boll weevil or other such pest in California.

Therefore one acre in California is worth at least as much as five acres where the farmer must gamble with the weather and the weevil.

And it takes less work to farm one acre than five acres.

Furthermore, it is worth a great deal just to live in California.



MAP OF CALIFORNIA

The green shading indicates the cotton lands

10-'24

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